

Summer/Fall 2013



## *Moose on the Loose!*

In June of 2012 a male moose calf was struck and killed by an automobile in Baraga County. The KBIC received the moose (*mooz*) from the MI DNR and ,with funds from the Culture Committee, had a full body mount of the moose prepared by a local taxidermist. The moose will be on display at the Cultural Building near the Pow Wow grounds.



**Name the moose!** Email Lori Ann Sherman, [loriann@kbic-nsn.gov](mailto:loriann@kbic-nsn.gov), to submit your name suggestions.

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## *KBNRD Staff help with KBIC K-6th Summer Camp*

This summer, the KBIC Youth Programs held a summer camp for youth in grades K-6<sup>th</sup>. The program ran eight weeks Monday through Thursday from 8:00AM to 5:00PM, June 11<sup>th</sup>-August 7<sup>th</sup>. There were a total of 41 youth pre-registered for the camp which partnered with the Natural Resource Department, Donald LaPointe Health Center, Tribal Police Department, Free Spirit Fitness, Great Lakes Indian Fish and Wildlife Commission, and Baraga Fire Department. Each day of camp featured two different activities from one of the collaborating departments. KBNRD kicked summer camp off with the first activities of building bee, bug and bird houses. Other KBNRD activities throughout the summer included making bug repellent and sunscreen, planting and boulder painting at Sand Point, macro invertebrate species identification, monarch butterfly demonstration, and salsa making. The kids also had the opportunity to visit the KBNRD offices to see the fish hatchery and native plant greenhouse. The KBNRD looks forward to participating with the summer youth camp in the future.



*Water resources specialist, Micah Petoskey helping youth campers identify macro-invertebrates collected from the Falls River*

## Household Hazardous and Electronic Waste Collection



*Container of DDT (a pesticide commonly used prior to 1972) collected during the June collection event*

KBIC hosted a free household hazardous, white goods and electronic waste collection event in June. The collection event was open to tribal members and all non-tribal residents of Baraga County. Approximately 400 used electronic devices such as TVs, computers, monitors, and microwaves were collected as well as over 6,000 pounds of household hazardous waste. Wastes collected included used oil, old gasoline, pesticides, mercury, oil filters, car batteries, and other hazardous materials. The collection event was considered a big success by all involved considering that Baraga County only has about 8,860 residents. **A total of 24,206 pounds of waste was collected during the event.**

All waste collected will be recycled or disposed of depending upon material type. Proper handling and disposal of hazardous waste materials is a critical part of preventing potential contaminant release to the Lake Superior ecosystem which helps protect this precious resource. With the help of U.S. EPA Great Lakes Restoration Initiative funding we will be able to establish a regular collection program, leading to increased protections for our wonderful Lake Superior.

## Summertime Ozone Monitoring

After attending an Air Quality course this past winter, it came to the attention of the KBNRD Air Quality Specialist that ozone levels at the nearest monitoring locations were close to the maximum allowable limits. Ozone in the upper atmosphere is good and protects us from harmful UV radiation. However, ozone at ground level is harmful and can contribute to serious health effects. Ozone is one of the six criteria air pollutants. It is primarily formed when volatile organic compounds and nitrogen dioxide, produced by industry and combustion sources, come together and there is a presence of heat and sunlight. Since heat and sunlight contribute to higher ozone levels, the summer months can have especially high levels. High concentrations of ozone can occur in rural areas that are located within wind patterns of industrialized areas.



*Ozone analyzer and calibrator*



*Ozone air intake and ventilation*

The KBNRD was loaned ozone monitoring equipment by the Tribal Air Monitoring Support Center (TAMS), a collaboration between the US Environmental Protection Agency and the Institute for Tribal Environmental Professionals (ITEP). The TAMS center sent a professional to the KBNRD to aid in the installation and training on the ozone equipment. The data collected from the ozone monitoring project is very valuable, not only by showing what ozone levels are like in the area, but also in being able to request a more permanent air monitoring site.

The air quality page on the KBNRD's new website (<http://nrd.kbic-nsn.gov>) now has an air quality complaint/inquiry submission section. If you have any questions regarding the ozone project please feel free to use the website or contact Lauren Nenadovich at [lauren@kbic-nsn.gov](mailto:lauren@kbic-nsn.gov) or 906-524-5757 x28.



## *Wildlife Management planning Update*

Public presentation of wildlife results took place on June 21, 2013 and August 7, 2013. A copy of the PowerPoint presentation can be viewed at <http://nrd.kbic-nsn.gov/> (under publications and resources). Results from the KBIC Wildlife and Natural Resources Survey are being compiled into a report and will be presented at a public forum in fall of 2013. Surveys were mailed on February 20, 2013 to 824 Tribal members that were 18 years of age or older. The response deadline was set for March 22, 2013 and a total of 264 (32%) were completed and returned to the KBIC-NRD. Thanks to generous donations of money from the Natural Resources Committee and the Tribal Council, appreciation prizes were available to win for anyone that completed the survey. Winners of the appreciation prizes were:

- **Crossbow** – Monica Kohn
- **0.22 Long Rifle** – Roger Duschene
- **\$100 Gift Certificate Mitch's Trading Post** – Doug Welsh
- **Equus Borealis foot massage** – 1) Betsy Ross and 2) Gary Hueckstaedt
- **\$50 Pine's Cards** – (11 total) James Bykkonen, Jeremy Hebert, Jacob Maki, Joseph White, Venus Ripley, Liz Julio, Chad Tollefson, Susie Crawford, Mariah Furaitar, Doreen Blaker, and Vicky Mleko



*Black bear caught on KBNRD remote camera*

Watch for announcements about the results of this comprehensive community survey in fall of 2013.

### **IMPORTANT NOTICE:**

KBNRD seeks elders and community members that are interested in serving on a Tribal Ecological Knowledge advisory committee (TEK) for the development of the KBIC Wildlife Management Plan. Participation is voluntary and members of the TEK committee will review drafts of the management plan and meet in person twice between October 1, 2013 and September 30, 2014 to discuss proposed edits and culturally significant additions/changes. We would greatly appreciate your assistance, if you are interested in helping to review the Wildlife Management Plan as it is drafted, please contact Pam Nankervis at 524-5757x19 or [pnankervis@kbic-nsn.gov](mailto:pnankervis@kbic-nsn.gov).

## *Wolf Management Update*



*Wolf caught on KBNRD remote camera*

A Michigan wolf hunt season is scheduled to open on November 15, 2013 and will run until December 31, 2013. A total of 1,200 licenses went on sale September 28, 2013 for \$100 each for MI residents and \$500 for non-residents. A limited harvest of 43 wolves from three Wolf Management Units (WMU) will be allowed. Quotas per WMU and are as follows:

- WMU A in Gogebic County in the far western Upper Peninsula – target harvest of 16 wolves
- WMU B in portions of Baraga, Houghton, Ontonagon and Gogebic counties – target harvest of 19 wolves
- WMU C in portions of Luce and Mackinac counties – target harvest of 8 wolves.

Bag limit is one wolf per hunter per year and firearm, crossbow and bow and arrow hunting are allowed on public and private lands.

**ARTICLE CONTINUED ON PAGE 4**

## *Wolf Update Continued*

No wolf hunt licenses will be available through KBIC for tribal members as there is a resolution against wolf hunting within the Home Territory approved in November 2012. A Tribal Cultural Values statement is printed in the Michigan Wolf Digest (page 2) below the Table of Contents which states:

“People hold differing values and beliefs about wolves. As one example of many diverse perspectives, the cultural and religious values regarding wolves are particularly important to many Native Americans in Michigan (the Anishinaabe). Wolves are part of their family clan system and play an important role in cultural teachings and creation stories. The Anishinaabek believe that their fates are inextricably linked and what happens to the wolf also happens to their family. For these reasons, Michigan tribal governments are opposed to wolf hunting, and tribal lands are not open to hunting of wolves. Please respect these values and beliefs.”

KBNRD continues to monitor the L’Anse Reservation for wolf pack activity with remote camera studies and track records.

## *KBIC works with NIACS and USFS to address climate change impacts to forestry resources on the Reservation*

Increased temperatures and altered precipitation will have negative effects on the local sugar maple (*Acer saccharum*) populations. Suitable habitat for sugar maple is predicted to decrease as climate change accelerates. It is not likely that all sugar maple will be gone from the KBIC reservation, as refugia/sanctuary (areas where the landscape level climate will be moderated by topographical features such as cold air drainages and northern aspect slopes) will still be present in small pockets. Sugar maple is a culturally significant species to the KBIC. Maple sugaring may be threatened in the future. KBIC Forestry and Natural Resources Departments are working with the Northern Institute for Applied Climate Science (NIACS—part of the U.S. Forest Service) to set up a demonstration project to see if genetic variants of sugar maple from warmer regions of the U.S. will establish and thrive in the U.P.



*Project site dominated by sugar maple*



*Maple syrup from the KBIC sugar bush*

**Project Description:** KBIC owns a 234 acre tract of Fee Land off Indian Road. This area is located on a southern aspect slope which generally receives more solar radiation and exhibits warmer and drier conditions. Sugar maple is currently the dominant species in the overstory and in the seedling layer. Management proposed will include a silvicultural prescription of group selection harvest to create gaps throughout the stand. After harvest, seeds collected from sugar maple in different areas throughout its natural range (from Maine down the Appalachian Mts west to Illinois, respectively) will be germinated and planted randomly within the created gaps. Monitoring for successful establishment and recruitment of the genetic variants into the forest community at the site will take place over the next five years. If successful, the variants that survive could potentially help to fill the gaps if sugar maple begins to decline in this stand. This will be a proactive approach to maintain sugar maple as a dominant species within the reservation landscape in response to climate change.



## *KBIC Hosts Intertribal Nursery Council and Kinomaage Meetings*

The Intertribal Nursery Council (INC), Cedar Tree Institute, and US Forest Service (USFS) collaborated to host an Eastern Tribal Nursery Roundtable/Kinomaage meeting in August. The meeting began with a presentation by Jeremy Pinto, Research Plant Physiologist/Tribal Nursery Specialist about the INC. The INC began in 2001 and is a USDA Forest Service managed, tribally guided, organization for advancing the interests of native peoples involved with plant production in nurseries. Meetings are held annually, usually in the western states, and are open to tribal members and non-tribal members who work for or with tribal agencies. Their focus is technology transfer and sharing, conservation education, preservation of ecological knowledge, reforestation, restoration, and nursery training.



*INC and Kinomaage participants touring Canyon Falls*

Kinomaage is a Northern Michigan native plant network for Native American communities. Kinomaage is involved in native plants restoration and pollinator protection and provides a forum for discussions of plant issues and teachings. Jan Schultz, USFS botanist, spoke on restoration opportunities, native plants sustainability, loss of habitat, and threat of invasive species. Most of our food comes from genetic manipulation of species whose ranges may be very small. An example is our cranberry; northeast North America has the original species which was genetically manipulated to give commercial crop species. Identification and protection of habitats and supplemental growing of species would be greatly beneficial to all. Scott Herron, Ferris State University ethnobotanist, brought medicinal plants and spoke of potential for university partnerships. He offered advice on potential nursery expansions and native/medicinal plant garden species. Increasing the native species used in roadside plantings to include not only pollinator-friendly but food/medicinal plants would be a return to traditional trails.

Participants came from as far away as North Carolina and Minnesota for the two day conference to share knowledge and insights and tour the mining restoration area at Sand Point. Future plans and needs were brought forth by participants in an open roundtable discussion. There will be another Kinomaage meeting and Fungi Workshop in Baraga on October 4th. For more information please contact Evelyn Ravindran, 906-524-5757 ext. 11 or visit our website <http://nrd.kbic-nsn.gov>.

## *NRD Staff to Present at the North American Pollinator Protection Campaign Conference in Washington, D.C.*

Two NRD employees, Evelyn Ravindran and Karen Andersen, were invited to present at the North American Pollinator Protection Campaign (NAPPC) International Conference, October 22-24 in Washington, D.C. The meeting will be hosted by the Department of the Interior. Evelyn and Karen will share information about the KBIC Native Plants Program and the Sand Point Restoration Project.

The NAPPC is a growing, private-public collaboration of more than 120 diverse partners with scientists, researchers, conservationists, government officials and stakeholder representatives working to support the health of pollinating animals and the plants and habitat that they support. For more information about NAPPC or to view the conference agenda, please visit the NAPPC website <http://pollinator.org/nappc/>.



*A local pollinator enjoying native plants at the Sand Point restoration site*

## *The People's Garden*

In response to community member requests, the KBNRD has established a "People's Garden" near the walleye rearing ponds and New Day (Brewery Road) in L'Anse. Funding for the garden was provided through the KBIC Natural Resources Committee and the Great Lakes Restoration Initiative. This year we grew tomatoes, peppers, green beans, squash, peas, corn, potatoes, onions, cucumbers, and zucchini. The purpose of the garden is to provide KBIC community members access to fresh, locally grown produce. Next year the People's Garden will be a plot-based garden. Tribal community members may apply for a plot to grow their own vegetables. Plot size will be based on the number of individuals and families that apply. For more information and/or to apply for a garden plot for the 2014 growing season, please contact Erin Johnston 524-5757 ext. 24. **There will be three information meetings in January to discuss the plot-garden system. If you sign up for a plot, attendance at one of the three meetings is mandatory.** We will discuss the layout of the garden, rules for use of the area, and also get a list of vegetables people would like to grow. Seeds and plants will be provided by the KBNRD.



*The People's Garden after planting this past spring*

## *Lake Superior Day Beach Clean-Up*



*Pick-up bed full of trash collected from local beaches*

The KBIC, whose Reservation lands border Keweenaw Bay of Lake Superior, organized a beach cleanup on July 19th in celebration of Lake Superior Day. About 40 people including KBNRD staff and tribal youth crews cleaned approximately 7 miles of Lake Superior beaches from just north of Assinins/Sand Point all the way around the Bay to Pequaming/Second Sands Beach. The day started with an opening ceremony performed by KBIC member Debra Williamson. The cleanup was followed by a luncheon provided by the KBIC W.H.I.P.P. Taskforce at the Sand Point Light House day use area. After lunch participants enjoyed time canoeing on the Lake. The crews filled a large trailer with bags of trash, tires and rusty metal.

Lake Superior Day, which was created in the early 1990's by the Lake Superior Binational Forum, is officially the third Sunday in July. The Binational Forum, a group of volunteers from the United States and Canada working together to protect Lake Superior, states that Lake Superior Day is a "special day held around the lake to highlight the importance of the world's largest freshwater lake to the basin's environment and economy." KBIC will continue to hold annual events in honor of Lake Superior Day, but we encourage the community to treat every day as Lake Superior Day and take actions to restore and protect our beautiful Lake. Remember to take your trash with you as the beaches are a shared resource for everyone to enjoy.



*Lake Superior Day volunteers*



## *Youth Conservation Crew (YCC)*

KBIC and the Superior Watershed Partnership (SWP) teamed up for the fifth year in a row to offer a Youth Conservation Corps (YCC) for tribal youth. This year's crew was supervised by Tonya Swenor and Greg Houle from SWP. YCC activities included (but were not limited to) beach clean-ups, invasive species control, native plantings at Sand Point, lamprey monitoring, and compost bin construction. We hope to be able to offer this program every year to provide opportunities for tribal youth to get outdoors and learn about natural resources and natural resource stewardship.



*YCC setting up the adult sea lamprey net on the Silver River*



*YCC and their fruit fly traps*

## *11th Annual KBIC Kid's Fishing Derby*

This year marked the 11<sup>th</sup> Annual KBIC Kid's Fishing Derby at Sand Point near the Lighthouse Pond in Baraga. Attendance was recorded breaking with 425 kids participating (up from 370 in 2012). Over 100 people volunteered during the Derby including local sportsman's club members, state, federal and tribal agency employees, community members, 4-H, KBIC summer youth programs and many more.

Activities included the pond fishing contest, inner tube casting, Velcro fishing, big trout tank fishing, moon walks, and other small games. Food and beverages are free for everyone in attendance. The Lighthouse Pond is stocked with bluegill, rock bass, small mouth bass, pumpkinseed sunfish, and yellow perch. Prizes were given away for the most fish, biggest fish and catching a tagged fish. No kid left the Derby empty handed. Each registered fisher kid received a fishing pole or a trip to a special prize tent if they brought their own pole from home.

This year the Derby was held in honor of the late Todd Warner, former director of the KBNRD. Members of Todd's family traveled from Minnesota to attend the event and to present a check to the recipient of the *Todd Warner Legacy Award*, which was established in 2013 in Todd's memory. Sierra Ayres, a 2012 graduate of L'Anse High School and current student at the University of Michigan was the recipient of the award.



*Fisher kids trying their luck in the fishing pond*



*Sierra Ayres (third from right) with the Warner Family*

## *Spring Fish Surveys*

Utilizing live capture, tagging, and release techniques (Fyke Net and Short-Term Gillnet Deployments), walleye and other fish species were sampled and assessed in Portage Lake, Torch Lake, and Huron Bay this spring.

Although walleye capture rates were low during 2013 spring surveying efforts, it was encouraging to capture young, sub-adult walleye in the region. Some of these young walleye have been retained for analysis to determine if they were stocked by KBIC. If the fin ray and otolith (inner ear structure used to age fish) samples collected from these fish, when placed under a UV light and scope apparatus, show an iridescent coloration, it is indicative of a stocked walleye. Samples will be analyzed this winter, with the help of U.S. Fish and Wildlife Service Staff.

Fyke Net deployments in Portage and Torch Lakes also resulted in walleye egg collections. Eggs were returned to the Brewery/Vuk Road Walleye Ponds where some were incubated and hatched.

Both juvenile and adult lake sturgeon were captured, assessed, tagged and released during lake sturgeon surveys in 2013. Over 30 individuals have been caught to date.



*Fyke net on Portage Lake*



*Lake sturgeon captured, tagged and released during fall assessment*

A variety of other species were captured during survey efforts including northern pike, smallmouth bass, lake trout and burbot. Tissue samples were collected from a variety of species and were submitted to the Michigan Department of Community Health for contaminant analyses and human consumption advisory updating. This collection effort will continue into Fall 2013, as KBNRD Staff perform various fish assessments in Lake Superior and surrounding waters.

Lastly, KBNRD has been involved with multi-agency efforts to assess and rehabilitate walleye in the Portage, Torch Lake system for a number of years now. KBNRD has worked cooperatively with US Fish & Wildlife Service, Great Lakes Indian Fish & Wildlife Commission, MiDNR and MDCH (Michigan Department of Community Health), in surveying, stocking, and gathering/sharing important information pertaining to walleye abundance, contaminant levels, stocked fish survival, and other aspects of this large and dynamic fishery. KBNRD will continue to support this multi-agency effort in the future.



*KBIC walleye ponds in Zeba, MI*



## *Fish Stocking*

A one million surplus walleye fry donation from the Chippewa Ottawa Resources Authority (CORA), and the incubation and hatch of walleye eggs collected from Portage Lake, allowed KBIC to stock 850,000 walleye fry and more than 16,000 walleye fingerlings into Portage Lake, Keweenaw and Huron Bays as of September 1, 2013 (see table for break down by water body). In early September, 425 extended growth (4-8 inches in length) walleye were stocked into Portage Lake and 75 were stocked into Keweenaw Bay.



*Variation in size of summer stocked walleye*

Walleye	
Location	Number Stocked
Portage Lake	500,000 fry
	8,344 fingerlings (2-3 inches)
Huron Bay	250,000 fry
	6,090 fingerlings (2-3 inches)
Keweenaw Bay	100,000 fry
	2,470 fingerlings (2-3 inches)

Brook and Lake Trout		
Location	Number Stocked	Type (size)
Porcupine Mountains Wilderness Area	3,000+	Eyed brook trout eggs
Kelsey and Zeba Creeks	35,000	Coaster brook trout fry
Silver, Falls, Perch, Ontonagon Rivers and Menge Creek	15,000	Yearling brook trout
Point Abbaye	3,486	2+ yr old coaster brook trout
Keweenaw Bay	10,000+	Lake trout



*Extended growth walleye*

## *Aquatic Invasive Species*

Aquatic invasive species (AIS) are a concern for our community. These invaders impact our waterways and jeopardize our local ecosystem. In addition to the sea lamprey, which has been present for more than 50 years, annual fishery assessments and monitoring have identified several other exotics, including Eurasian ruffe, alewife, rainbow smelt, spiny water flea, Eurasian watermilfoil, and suspect rusty crayfish. While purple loosestrife is actively controlled in Baraga County, marsh thistle is a common wetland species in the area and Eurasian watermilfoil has been identified in the Portage Lake System, Ojibwa Recreation Pond, and Prickett Lake. Through the Keweenaw Invasive Species Management Area (KISMA), phragmites has also been identified in wetland systems in bordering counties. KBIC endorses early detection-rapid response methodology and has secured funding to create an Aquatic Invasive Species Plan that will focus around this methodology. The AIS Plan will help KBIC more effectively use resources to combat this growing problem.



*Eurasian watermilfoil*

## *KBIC Hosts a Mining Forum*

The KBNRD hosted its 2nd annual Mining Forum in September at the Ojibwa Casino Chippewa Room in Baraga, MI. Over 50 attendees participated, including tribal members, elders, employees, council members, students, university faculty and representatives from environmental and citizen-based organizations across the UP. Mining updates were provided by KBIC Mining Technical Assistant Jessica Koski followed by a guest speaker Connie Sue Martin, an attorney specializing in environmental and Indian law. Ms. Martin spoke on "The Role of Tribes and Citizens in Protecting the Environment." In the context of mining activities, this presentation covered the role of tribal sovereignty and regulatory authority, federal laws and trust responsibility, consultation policies, treaty rights, and Michigan citizen suit provisions. During dinner, a trailer screening of a Great Lakes mining documentary in the works, *Trust*, which was well received by the audience. The forum concluded with group discussion on concerns regarding increasing mining in the region and potential solutions.



*Attorney Connie Sue Martin presenting during the KBIC Mining Forum*

## *Youth Mining Education Field Day*



*YCC and supervisors at Eagle Rock in July*

In July the KBNRD hosted a group of tribal youth, sponsored by the Superior Watershed Partnership, on a mining field trip. The youth visited the Yellow Dog Watershed Preserve's office in Big Bay, MI where they watched a documentary film about the Eagle Mine and listened to updates about the project. Next, they learned about watersheds and how their health can be monitored. Then the youth went to the Eagle Mine where they asked questions and visited Eagle Rock, a sacred site to KBIC that is currently fenced within the mine site. A short teaching on treaty rights was provided and the group offered tobacco.

## *KBIC Adopts a Mining Moratorium*

In July the KBIC Tribal Council adopted Resolution KB-1944-2013 establishing policy to prohibit mineral exploration and mining activities within the reservation. The moratorium is effective for up to five years while the Tribal Council considers adopting a regulatory mining ordinance that would further ensure protection of the reservation environment and the health and well-being of tribal members and future generations. KBIC recognizes that mining, particularly the mining of metallic sulfide minerals, have well-known significant impacts to water resources and ecosystems. Due to mineral interest within the reservation and areas where mineral rights are controlled by mining companies, KBIC is asserting its sovereign authority to temporarily ban potentially damaging mining activities.



*Mining exploration on the KBIC Reservation at the BIC site off Indian Road*



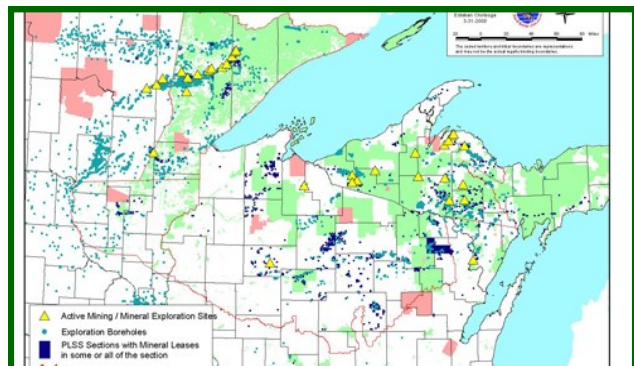
## *Mining in the Ceded Territory of Michigan*

In July, Rio Tinto announced that it had finalized selling the Eagle Mine and Humboldt Mill to Lundin Mining Corporation of Toronto, Canada. Lundin says it will ramp up construction and expects to start production at the mine by the end of 2014. The company plans to transport ore from the mine to mill with about 50 trucks per day using existing roads through the cities of Marquette, Ishpeming and Negaunee, and then transport metal concentrate from Humboldt via rail to an undisclosed buyer.

Waste after processing at Humboldt, known as tailings which will be very toxic consisting of reactive metal sulfide minerals, will be deposited into an existing pit lake on site indefinitely. This site has been under investigation by the U.S. Environmental Protection Agency as a potential Superfund Site eligible for listing on the National Priorities List due to historical contamination affecting nearby wetlands and the middle branch of the Escanaba River Watershed.



*Construction at the Humboldt Mill, August 2013.  
Photo credit: Jeremiah Eagle Eye*



*Mining Activity in the Ceded Territory*

Over the past two years, Orvana Minerals Corporation received various permits to begin mining at the Copperwood Project near Ironwood, MI. This site is located between the Black and Presque Isle Rivers, and immediately adjacent to the Porcupine Mountain State Wilderness Area and pristine Lake Superior shoreline. This mine, currently in the construction design phase, poses significant risks to water resources of Lake Superior. Notably, the company has been permitted to build a very large permanent waste tailings pile that will cover over 16,000 feet of existing streams, almost 60 acres of wetland, and is likely to leach heavy metals and other contaminants into streams that empty directly into Lake Superior after the mining company is gone. A worst case scenario would be complete tailings pile failure upstream of Lake Superior if unpredicted climatic, geological or technical conditions occur.

Exploration by other companies, mostly based in Canada, continues to take place throughout the western UP. Highland Copper has been conducting extensive mineral exploration in the Keweenaw Peninsula and is now focusing on two copper-chalcocite deposits with favorable drilling results for the company, located at Gratiot Lake and G2 along the south side of Mt. Houghton.

## *Shakopee Tribe Assists KBIC with Water Monitoring*

East of the L'Anse Reservation, underground aquifers discharge as fresh-water springs that form several pristine rivers including the Salmon Trout River, which then flows into Lake Superior. This area, known as the Yellow Dog Plains, is also the location of the Eagle sulfide mine. In response to environmental threats posed by this mine, KBIC requested assistance from the U.S. Geological Survey (USGS) for a water monitoring program in this area. The program will last five years and cost over \$1 million. KBIC reached out to other tribes for financial assistance with the program, recognizing a common cause with other tribes of the Great Lakes to protect our waters threatened by a multitude of potential mining projects. The call for help was quickly answered with a funding award by the Shakopee Mdewakanton Sioux Community in the amount of \$92,200 per year. With this generous support, the KBIC is grateful to be able to exert its stewardship of water in this area and was able to start the program in June of this year.



*KBIC Council Leaders meeting with Shakopee officials*

## *Torch Lake Area of Concern*

Intensive copper mining and processing took place in the Keweenaw Peninsula from 1845-1968. This has resulted in lasting impacts in and around Torch Lake (Houghton County, MI) which is an Area of Concern (AOC). An AOC is a location that has experienced a high level of environmental degradation and is designated as such under the U.S. – Canada Great Lakes Water Quality Agreement. Torch Lake is one of 39 AOC's in the Great Lakes region. Over the past 30 years, partial solutions have taken place to address contamination at this site, primarily by covering exposed tailings along the shoreline. Fish tumors in the lake have disappeared; however, fish consumption advisories are ongoing due to high concentrations of mercury and PCBs (industrial coolant). Considerable evidence points to local sources and hotspots of PCBs within the lake that have never been fully investigated or addressed. The mining industry used numerous PCB-containing transformers that are a likely source. Copper concentrations have also not declined in Torch Lake since the capping of shoreline tailings, which are likely from buried mine tailings within the lake. A team of researchers at Michigan Technological University have been collecting available information, identifying critical information gaps, and working with local stakeholders and the KBIC to plan possible ways to improve conditions in and around Torch Lake. Anyone interested in learning more about ongoing work at this site may contact Dr. Noel Urban ([nurban@mtu.edu](mailto:nurban@mtu.edu)) at Michigan Technological University in Houghton, MI.



*Torch Lake AOC. Photo Credit: Michigan Sea Grant*

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For more information, news and events check us  
out on the web!

<http://nrd.kbic-nsn.gov>

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